

Serial No. 09/882,125

In the Drawings:

Fig. 6 is a “replacement” for the original formal drawing sheet submitted identified as “Table”. A new “replacement” sheet is being submitted herewith for entry and is also being submitted to the Official Draftsperson. Entry of this replacement sheet is respectfully requested.

REMARKS

Claims 1-44 are in the case and presented for reconsideration. Claims 1 and 2 have been amended. No new matter has been added.

New Fig. 6 is being submitted herewith as a "Replacement" sheet for the original drawing sheet identified as "Table" which was filed as part of the original drawing sheets submitted with the Specification. Accordingly, entry of new Fig. 6 is respectfully requested.

Claims 1 and 20 have been objected to for informalities. Claims 1 and 20 have been amended in a manner which is believed to have successfully overcome this objection. The support for this Amendment can be found in the Application's Specification, for example, Page 13, Lines 4-25.

Claims 1-10, 19-30, 39 and 42-44 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant's admitted prior art ("AAPA") in view of U.S. Patent No. 6,229,300 (Dlugos) and U.S. Patent No. 5,381,090 (Adler et al.). Claims 11-18 and 31-38 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over AAPA, Dlugos, Adler in view of U.S. Patent No. 4,247,601 (Wiegand). Claims 40-41 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over AAPA, Dlugos, Adler in view of U.S. Patent No. 4,639,670 (Normann).

The Applicant respectfully traverses as follows. Dlugos is directed toward a Wiegand tilt sensor particularly useful as a replacement for prior art mercury switches which are commonly known to be environmentally unfriendly. Column 1, Lines 4-17.

Adler et al. is directed toward hub and bearing assembly with integrated rotation sensor and temperature measurement feature useful as a rotational speed sensor and particularly for use on a motor vehicle for detecting the rotational speed of a ground engaging wheel. Column 1, Lines 12-17.

Although Applicant's admission of the prior art (AAPA) does disclose the use of medical devices using position sensors for determining position of the medical device, there is no other admission, suggestion or even inference that would lead one of ordinary skill in this field to arrive at the Applicant's present invention as claimed, particularly, a medical location system comprising a medical device having a body and a position sensor when the sensor has a core made of Wiegand effect material (or a bi-stable magnetic material that produces a substantially uniform voltage pulse upon an application of an external field) and a winding circumferentially positioned around the core wherein the position sensor provides signals that are used to determine temperature at the position sensor and wherein the signals are used to determine location information of a portion of the medical device and a signal processor having a temperature sensor sensitivity algorithm and a location algorithm which receives signals from the position sensor wherein the signal processor determines the temperature at the position sensor using the temperature sensitivity algorithm as well as determines location information of the portion of the medical device based on the signals received from the position sensor using the location algorithm.

The Wiegand prior art reference describes a switchable magnetic device made of Wiegand wire for use in an improved switching device in order to respond to an external magnetic field to produce a pulse having improved signal to noise ratio and a larger peak amplitude. Column 1, Lines 61-65. Outside of this very general teaching, no description, suggestion or inference can be found in this reference that this material could be used as part of a position sensor for a medical device such as distinctly claimed in Applicant's present invention.

Normann describes a magnetic field sensor comprising Wiegand wires or similar bistable magnetic elements that is capable of delivering an individual pulse at a higher energy content than the pulse usually delivered by a single bistable magnetic element and in which the higher pulse energy is produced without a need for a supply of electric power. Column 3, Lines 43-49. Particularly, the magnetic field sensor of Normann is specifically applied to the field of optical fiber links, for example, for use with a light-emitting diode used as a transmitter diode in an optical fiber link. Column 5, Lines 13-16.

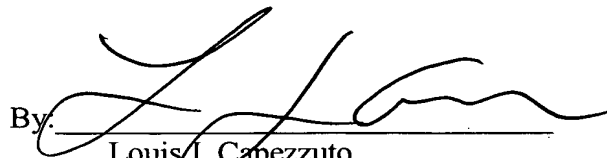
As mentioned above, Normann discloses a magnetic field sensor having Wiegand wires for use in an optical fiber link. There is absolutely no teaching, suggestion or even inference that this sensor could be used as a position sensor in a medical device. Moreover, when focusing specifically on the teachings in the Normann reference, it is clear that the Normann sensor is entirely incapable of being used as a position sensor in a medical device such as found with the Applicant's claimed present invention. Particularly, not only does the Normann sensor have dimensions that far exceed the position sensor of the Applicant's invention (Normann sensor Wiegand wire having a length of 18 mm and each winding having a length of 15 mm as indicated at Column 6, Lines 5-10), but the Normann sensor is used in conjunction with a light emitting diode (as a transmitter diode) for an optical fiber link. See Column 5, Lines 13-16. Thus, it is clear that the optical fiber link sensor of Normann is entirely incapable of being used with the Applicant's present invention which is directed toward a distinct and non-obvious invention.

It is important to note that neither Dlugos, Adler, the Applicant's admission of the prior art (AAPA), Wiegand or Normann describe, suggest or even infer, either alone or in combination with each other, the novel combination of features and function found with the Applicant's claimed present invention. Moreover, none of these references address using a signal processor having a temperature sensitivity algorithm and a location algorithm in combination with a medical device having a position sensor wherein the position sensor has a core made of a Wiegand effect material (or a core made of a high permeable material wherein the material is a bi-stable magnetic material that produces a substantially uniform voltage pulse upon an application of an external field) and a winding circumferentially positioned around the core such that the temperature at the position sensor can be determined as well as location information of a portion of the medical device based on signals provided by the position sensor such as found with the Applicant's claimed present invention.

Accordingly, by this amendment and for the reasons outlined above, the present invention is both patentable distinct and non-obvious over the cited prior art references and favorable action is respectfully requested.

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Respectfully submitted,

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Dated: June 22, 2005